

Laparoscopic Approach to Fibroid Torsion Presenting as an Acute Abdomen in Pregnancy

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ABSTRACT

Uterine leiomyomas (fibroids) are seen in up to 4% of pregnancies, and most commonly present with pain in pregnancy, which can be due to red degeneration or torsion. Most cases previously have been managed with open resection. We report the case of a 35-y-old primigravida woman, presenting with acute lower abdominal pain at 11 wk gestation. Ultrasound demonstrated an 8-cm fibroid only. She demonstrated features of lower abdominal peritonitis and was scheduled for a diagnostic laparoscopy. At operation, a torsed subserosal fibroid was found. She successfully underwent laparoscopic myomectomy with the endoGIA vascular stapler and subsequent Pfannenstiel delivery. The patient was discharged 48 h postoperatively to continue her pregnancy. This case demonstrates the safe application of laparoscopic excisional myomectomy in the first trimester of pregnancy. Previously reported cases in the literature have focused on open resection or bipolar diathermy enucleation and morcellation. A high degree of suspicion should be maintained for the diagnosis in patients presenting to the surgical service with acute lower abdominal peritoneal signs during pregnancy.

Key Words: Leiomyoma, Pregnancy, laparoscopy, Acute Abdomen.

INTRODUCTION

Uterine leiomyomas (fibroids) are common benign growths affecting the uterus.¹ During pregnancy, they can become symptomatic by undergoing red degeneration, bleeding, or torsing around a stalk if they are pedunculated.² Previous case reports have described open laparotomy for management of such cases in the first trimester.^{3,4} We describe the first case in the published surgical literature of a successful laparoscopic management of torsion of a pedunculated subserosal fibroid presenting as an acute abdomen in the first trimester of pregnancy.

CASE DESCRIPTION

This 27-y-old primigravida woman had an uncomplicated first 11 wk of pregnancy. She was otherwise healthy and took no regular medications. She experienced lower abdominal pain that started suddenly and then progressed over 24 h. She presented to her local obstetrics department and ultrasound demonstrated an intrauterine pregnancy and a large anterior fibroid. On comparison to a previous ultrasound undertaken 2 y earlier for pelvic pain, this had increased from 3 cm in size to its current 8 cm diameter. Her pain did not resolve over the following 24 h. Laboratory studies demonstrated rising inflammatory markers (CRP 100 g/dL and WBC 13g/dL) and so a surgical opinion was sought. A repeat ultrasound demonstrated no free fluid and no other abnormal intraabdominal findings. On clinical examination, the patient appeared flushed and had signs of lower abdominal peritonitis. She was therefore scheduled for diagnostic laparoscopy.

With the patient under general anaesthetic, an open Hassan approach was undertaken with a 10-mm infraumbilical camera port, 5-mm suprapubic port, and 10-mm left iliac fossa port. On laparoscopy, the omentum was found to be densely adherent to the pelvis with some straw-colored fluid visible, but no frank pus. Blunt dissection was undertaken to free the omentum and search for the appendix, which was normal. Examination of the small and large bowel was also inconsequential. Further dissection of the pelvis demonstrated a large fibroid arising from the anterior surface of the uterus that was adherent to the sigmoid and small bowel. After gentle dissection from the

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DOI: 10.4293/108680813X13794522666400

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bowel, the fibroid was investigated jointly by the surgical and gynecology teams, and found to be a torsed pedunculated subserosal variant. This was detorsed with gentle mobilization. In view of the risk of myomectomy during pregnancy, a decision was made to proceed via the laparoscopic approach, and a 5-mm laparoscopic vascular stapler was introduced through the 10-mm umbilical port and the camera switched to the left iliac fossa port. Successful myomectomy was undertaken by this approach. A small Pfannenstiel incision was undertaken to deliver the fibroid. A small drain was left in the pelvis and was removed 24 h postoperatively. The patient was discharged 48 h later to continue with her pregnancy.

DISCUSSION

Uterine leiomyomas are seen in up to 4% of pregnancies, and with the increasing age of obstetric patients they are increasingly common.¹ Fibroids predispose to pregnancy complications including early miscarriage, antepartum bleeding, and preterm labor.⁵ Most remain asymptomatic for the duration of pregnancy; however, symptomatic fibroids present in a manner dependent on their anatomical location and size.² Fibroids may be intramural, submucosal (where 50% of the mass may be in the myometrium), cervical, extrauterine, or subserosal, as in our case. Pain is the most common complication of fibroids during pregnancy (occurring in up to 15% of cases),⁶ which can be severe if the fibroid undergoes “red degeneration” or torsion. As our case demonstrates, the painful presentation can be sufficiently acute to give signs of lower abdominal peritonitis. Pedunculated subserosal fibroids are especially at risk of torsion, and this risk will increase if the fibroid enlarges. Some studies have suggested that smaller fibroids are more likely to increase in the first half of pregnancy.⁷ Our patient was noted to have a small prepregnancy fibroid, which had significantly enlarged by presentation.

Ultrasound is the mainstay of abdominal imaging assessment in pregnancy.² Fibroid complications that can be seen include red degeneration, in which there is significant internal echogenic change.⁸ Torsion can be defined using Doppler assessment of vessels especially for pedunculated variants if the stalk can be adequately visualized,⁹ although often, as in our case, the stalk may not be satisfactorily imaged preoperatively. Therefore, the diagnosis of torsion still must be kept in mind, because it is essentially a clinical diagnosis. CT¹⁰ and MRI¹¹ have been demonstrated to be of use in imaging assessments of fibroid torsion in pregnancy, although in the acute situation they may unnecessarily delay management.

Myomectomy during pregnancy has traditionally been reserved for cases of severe, intractable pain late in pregnancy. Risks of gravid myomectomy include hysterectomy secondary to severe hemorrhage, pregnancy injury, and pregnancy loss.¹² Select case reports have provided evidence of satisfactory outcome for open myomectomy during pregnancy.^{3,4,13} Ardovino et al.¹⁴ report a case of myomectomy of a painful adhered pedunculated fibroid at 14 wk gestation. They enucleated and morcellated the fibroid prior to excision. Pneumoperitoneum was created using the Veress technique in their case. Our case demonstrates the safe use of the open Hasson method in the first trimester. The key technical message is to adjust port site to gravidity and fundal height for safety to be assured.¹⁵ Most previous cases undertaken laparoscopically have enucleated the fibroid using bipolar diathermy.^{16–19} We have demonstrated the successful application of a laparoscopic vascular stapling device to achieve safe excisional myomectomy. Although morcellation has been reported effectively elsewhere, this approach can risk intraabdominal injury, prevents histological analysis, and is comparatively expensive.²⁰ We detorsed the fibroid prior to excision, a contentious approach in ovarian torsion due to the theoretical risks of venous thromboembolism from the ovarian vein, although recent studies suggest this risk may have been overestimated.²¹ However, these risks are less likely in fibroid torsion.

CONCLUSION

Torsion of uterine fibroids is an uncommon condition during pregnancy, but carries significant risk if left untreated. A high index of suspicion is required, as despite useful assistance of imaging modalities such as ultrasound, the diagnosis remains essentially clinical. Our case demonstrates the safe and successful laparoscopic management of a torsed subserosal fibroid using the endoscopic vascular stapling device. Surgical awareness of the entity and its management is vital, because it can present as acute lower abdominal peritoneal signs during pregnancy, which will mandate surgical referral.

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